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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,379	09/02/2004	Thomas Purr	DE 020057	1207

24737 7590 11/16/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
CAO, HUEDUNG X	
ART UNIT	**PAPER NUMBER**
2821	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/506,379	PURR ET AL.	
	Examiner	Art Unit	
	Huedung X. Cao	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/18/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZHOU (US 6,466,170 B2) in view of OKABE et al. (US 6,462,714 B1).

As per claim 1, Zhou teaches the claimed "a multiband microwave antenna" having "a substrate having at least a first metallization structure (11), wherein the first metallization structure has at least a metal area (111) forming a resonator area" which Zhou teaches in the plannar radiating 12 on the dielectric 16 (column 2, line 59-column 3, line7). Zhou does not explicitly disclose "a second metallization structure (12), wherein the second metallization has at least a resonant printed conductor structure (121)". However, Okabe teaches such "second metallization has at least a resonant printed conductor structure" is well known in the art (Okabe, the conductors on the top and the bottom of the conductive cubic 1 (column 6, lines 44-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Zhou's antenna with the second metallization has at least a resonant printed conductor structure, as taught by Okabe, doing so would allow the system to operate with multiple frequency ranges with a reduced sized antenna by utilitizing both of upper and lower

dielectric substrate (Okabe, column 10, line 66 to column 11, line 4, and column 12, lines 3-9).

Claim 2 adds into claim 1, "the metallization structures are applied to mutually opposed main faces of a substantially parallelepiped substrate (10)" which Zhou does not teach. However, Okebe teaches that such parallelepiped substrate having the metallization structures on its top and bottom surfaces is well known (Okebe, column 6, lines 44-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Zhou's antenna with the metallization structures on top and bottom of the substrate, as taught by Okabe, doing so would allow the system to operate with multiple frequency ranges with a reduced sized antenna by utilitizing both of upper and lower dielectric substrate (Okabe, column 10, line 66 to column 11, line 4, and column 12, lines 3-9).

Claim 3 adds into claim 1 that "the substrate (10) is arranged above a metallized base plate (2) that is at a reference potential" which Zhou teahces in the ground conductor 14 (Zhou, column 2, lines 59-65).

Claim 4 adds into claim 1, "there is opened in the metal area (111) of the first metallization structure at least a slot structure (112) that segments said metal area (111), thus enabling at least two resonant frequencies to be excited which Zhou teaches in the slot 26 (column 4, lines 1-11).

Claim 5 adds into claim 4, in which the at least a slot structure (112) is provided with at least a tuning slot (115, 116) which Zhou teaches in the tuning slot 26 (column 3, lines 36-39, 47-58).

Claim 6 adds into claim 1 "printed conductor structure is provided with a tuning slot" which Zhou does not teach. However, Okabe teaches that such "printed conductor structure is provided with a tuning slot" is well known (Okabe, the island conductor 6 on the lower surface of the conductive cubic 1; figure 1, column 6, lines 51-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Zhou's antenna with "printed conductor structure providing with a tuning slot", as taught by Okabe, doing so would allow the system to operate with multiple frequency ranges with a reduced sized antenna by utilitizing both of upper and lower dielectric substrate (Okabe, column 10, line 66 to column 11, line 4, and column 12, lines 3-9).

Claim 7 adds into claim 1, a multiband antenna which is fed via a feed pin (113) that is connected to the first and/or to the second metallization structure which Zhou eaches in the feeding strap 18 (column 3, lines 18-22).

Claim 8 adds into claim 1, a multiband antenna in which the first and/or the second metallization structure (11, 12) is connected to a shorting pin (114) fastened to the metallized base plate which Zhou teaches in the shorting straps 20 and 22 (column 3, lines 8-15).

Claim 9 adds into claim 1, "a printed circuit board, particularly for a mobile telecommunications device, having a multiband microwave antenna" which Zhou teaches in column 2, lines 59-65.

Claim 10 adds into claim 1, "a telecommunications device having a multiband microwave antenna" which Zhou teaches in column 2, lines 45-49.

Response to Arguments

3. Applicant's arguments filed 08/23/2005 have been fully considered but they are not persuasive.

Applicant argues that Okabe's conductor does not recite or suggest a second metallization structure that has a resonant printed conductor structure which is not correct. Firstly, the examiner pointed out that Zhou has a "planar radiating 12 on the dielectric 16" but doesn't disclose a "second metallic structure". The examiner then pointed out that Okabe teaches "the conductors on the top and bottom of the conductive cube 1", which satisfies the claim limitation of "a first and second metallization structure" both being on "a substrate", as required by the claim. Secondly, the application is directed to an antenna with a "metallization structure" on the top and bottom of the substrate (e.g., Figure 1). Thirdly, the examiner pointed to "column 10, line 66 to column 11, line 4" of Okabe. This part of the reference states that the "circuit can be provided in the lower surface of the conductive cubic of the opposite side of the conductive cube". Lastly, as part of the motivation, the examiner stated it would have been obvious to "employ Zhou's antenna with the second metallization ... as taught by Okabe". Therefore, when reading the examiner's remarks and the cited parts of the reference, particularly when read in context with the claims and application, it is clear how the primary reference to Zhou would be modified by Okabe to render the claims obvious. Clearly, element 12 of Zhou would have been modified to include two

metallization structures on a substrate, and with the second metallization structure that has a resonant printed conductor structure as is taught in the cube (1) of Okabe.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquires

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Cao
Patent Examiner

SHIH-CHAO CHEN
PRIMARY EXAMINER